

What is claimed is:

1. A cooperative computer based system for editing a web document including a plurality of clients and a server, the cooperative computer based system comprising:

a) means for generating editing instructions, converting editing instructions to a message related to editing and transmitting the message related to editing to the server;

b) means for determining if the web document can be modified; modifying contents of a copied web document stored in the server in conform to the message related to editing; and transmitting the message related to editing to the plurality of the clients; and

c) means for modifying contents of the copied web document stored in each of the plurality of the clients in conform to the message related to editing transmitted from the server.

2. The cooperative computer based system as recited in claim 1, wherein each of the clients includes a user interface module and a document manager module and the server includes a user interface module, a document module and a user manager module.

3. The cooperative computer based system as recited in claim 2, wherein the user interface module of the client

includes:

when at least one client edits the web document, means for converting data received from a user to editing instructions; and

5 means for transmitting the editing instructions to the document manager module of the client.

4. The cooperative computer based system as recited in claim 2, wherein the document manager module of the client
10 includes:

means for determining if the editing instructions are correct;

means for converting the editing instructions to a message related to editing which can be received by the
15 plurality of the clients, if the editing instructions are correct; and

means for transmitting the message related to editing to the server.

20 5. The cooperative computer based system as recited in claim 2, wherein the document manager module of the server includes:

means for receiving the message related to editing from the client;

25 means for determining if a lock is requested for the web document;

means for determining if the user has an authority to

0065406 " 1009000

editing the web document;

means for modifying contents of the web document as the user edited, if the user has an authority to editing the web document;

5 means for informing the user interface module of the server that it is completed to modify the contents of the web document;

10 means for converting the modified contents of the web document to a message related to editing to be transmitted to the plurality of the clients; and

means for transmitting the message related to editing to each document manager module of the clients.

15 6. The cooperative computer based system as recited in claim 2, wherein the user interface module of the server includes means for displaying the modified contents of the web document.

20 7. The cooperative computer based system as recited in claim 2, wherein the user manager module of the server includes:

means for managing information about users to participate in cooperative editing; and

25 means for determining if the user is allowed to edit by checking an identification and a password of the user, when the user logs in.

8. The cooperative computer based system as recited in claim 4, wherein each document manager module of the plurality of the clients includes:

means for modifying each copied web document stored in the plurality of the clients in conform to the modified contents, based on the message related to editing transmitted from the document manager module of the server; and

means for informing each user interface module of the plurality of the clients that it is completed that the contents of each copied web document are modified.

9. The cooperative computer based system as recited in claim 3, wherein each user interface module of the plurality of the clients includes means for displaying the modified contents, upon being informed that it is completed that the contents of each copied web document are modified.

~~10.~~ A method for cooperative editing of the web document in a cooperative computer based system including a server and a plurality of clients, the method comprising the steps of:

a) at a client, generating editing instructions, converting editing instructions to a message related to editing and transmitting the message related to editing to the server;

b) at the server, if the web document can be modified, modifying contents of a copied web document stored in the server in conform to the message related to editing; and

transmitting the message related to editing to the plurality of the clients; and

c) modifying contents of the copied web document stored in each of the plurality of the clients in conform to the message related to editing transmitted from the server.

11. The method as recited in claim 10, wherein the step a) includes the steps of:

a1) at the client, determining if it is possible to modify the web document, based on the editing instructions;

a2) disregarding the editing instructions if a portion of the web document to be modified is requested to be in a lock state by other users or the user has no authority to edit the document; and

a3) if the portion of the web document to be modified is not requested to be in the lock state by other users and the user has the authority to editing, converting the editing instructions to the message related to editing and transmitting the message related to editing to the server.

12. The method as recited in claim 11, wherein a line number, modified contents and a user identification (ID) are included in the message related to editing.

13. The method as recited in claim 12, wherein the step b) includes the steps of:

b1) searching a node having a line number equal to the

line number included in the message related to editing from contents list of the server;

b2) determining if the node is in the lock state;

b3) if the node is not in the lock state, determining if
5 the user has the authority to editing, and otherwise, determining if the lock is requested by the user who modified the contents;

b4) if the user has the authority to editing, modifying the contents included in the node and then informing a user
10 interface module of the server that the contents are modified;

b5) converting the modified contents to the message related to editing and transmitting the message related to editing to the plurality of the clients;

b6) if the lock is requested by the user who modified the
15 contents, going to the step b3); and

b7) disregarding the message related to editing if the lock is not requested by the user who modified the contents or if the user has no authority to editing.

20 14. The method as recited in claim 13, wherein the step c) includes the steps of:

c1) determining if a my user ID indicating an ID of the user who modified the contents is equal to the user ID contained in the message related to editing received from the
25 server;

c2) if the my user ID is not equal to the user ID, searching the node having a line number equal to the line

number from the contents list of each of the plurality of the clients;

c3) modifying contents included in the node and informing the user interface module of each of the plurality of the clients that the contents are modified;

c4) at the user interface module of each of the plurality of the clients, displaying the modified contents; and

d5) if a my user ID is equal to the user ID, storing the modified contents in an editing list included in the client of the user who modified the contents and then going to the step c2).

15. A computer-readable record media storing instructions for performing a method for editing a web document cooperatively in a cooperative computer based system including a server and a plurality of clients, the method comprising the steps of:

a) at a client among the plurality of the clients, generating editing instructions, converting editing instructions to a message related to editing and transmitting the message related to editing to the server;

b) at the server, determining if the web document can be modified, based on the message related to editing; modifying contents of a copied web document stored in the server in conform to the message related to editing; and transmitting the message related to editing to the plurality of the clients; and

c) modifying contents of the copied web document stored in each of the plurality of the clients in conform to the message related to editing transmitted from the server.

5

09685406 "100900